[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-7491; Directorate Identifier 2015-NE-39-AD]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede airworthiness directive (AD) 2016-13-05, which applies to all General Electric Company (GE) GE90-76B, GE90-77B, GE90-85B, GE90-90B, and GE90-94B turbofan engines. AD 2016-13-05 requires eddy current inspection (ECI) of the high-pressure compressor (HPC) stage 8-10 spool at each shop visit for all affected engines and ECI or ultrasonic inspection (USI) for certain affected engines. Since we issued AD 2016-13-05, we determined that the risk of the failure of an HPC stage 8-10 spool was excessive without repetitive USI prior to shop visit. This proposed AD would require initial and repetitive on-wing USIs of the HPC stage 8-10 spool for certain engines prior to shop visit and ECI of all affected engines at each shop visit. We are proposing this AD to correct the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact General Electric Company, GE-Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215, phone: 513-552-3272; fax: 513-552-3329; email: geae.aoc@ge.com. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2015-7491; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: John Frost, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7756; fax: 781-238-7199; email: john.frost@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2015-7491; Directorate Identifier 2015-NE-39-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On June 15, 2016, we issued AD 2016-13-05, Amendment 39-18569 (81 FR 41208, June 24, 2016; corrected 81 FR 42475, June 30, 2016) ("AD 2016-13-05"), for GE GE90-76B, GE90-77B, GE90-85B, GE90-90B, and GE90-94B turbofan engines. AD 2016-13-05 requires an ECI or USI of the HPC stage 8-10 spool and removing from service those parts that fail inspection. AD 2016-13-05 resulted from an uncontained failure of the HPC stage 8-10 spool, leading to an airplane fire. We issued AD 2016-13-05 to prevent failure of the HPC stage 8-10 spool, uncontained rotor release, damage to the engine, and damage to the airplane.

Actions Since AD 2016-13-05 Was Issued

We issued AD 2016-13-05 without including the repetitive USI prior to shop visit to expedite introduction of the corrective actions to the fleet. Since we issued AD

2016-13--05, we determined that a repetitive USI is required based on analysis that the risk of the failure of an HPC stage 8-10 spool is excessive without this inspection.

Related Service Information

We reviewed GE GE90 Service Bulletin (SB) SB 72-1151 R00, dated June 10, 2016. This SB describes procedures for an on-wing USI of the stage 8 web of the stage 8-10 spool.

We also reviewed Chapter 72-31-08, Special Procedures 003; and Chapter 72-00-31, Special Procedures 006, in the GE GE90 Engine Manual, GEK100700, Revision 68, dated September 1, 2016. These procedures describe how to perform ECI of the stage 8 aft web of the stage 8-10 spool.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain all the requirements of AD 2016-13-05. This proposed AD would also require repetitive USI of the HPC 8-10 spool.

Interim Action

We consider this proposed AD interim action. GE is determining the root cause for the unsafe condition identified in this proposed AD. Once a root cause is identified, we will consider additional rulemaking.

Costs of Compliance

We estimate that this proposed AD affects 54 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	7 work-hours x $85 per hour = $595 per inspection cycle	$0	$595 per inspection cycle	$32,130 per inspection cycle

We estimate the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. We have no way of determining the number of engines that might need this replacement:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replacement of spool	0 work-hours x $85 per hour = $0	$780,000	$780,000

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2016-13-05, Amendment 39-18569 (81 FR 41208, June 24, 2016; corrected 81 FR 42475, June 30, 2016), and adding the following new AD:

General Electric Company: Docket No. FAA-2015-7491; Directorate Identifier 2015-NE-39-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2016-13-05, Amendment 39-18569 (81 FR 41208, June 24, 2016; corrected 81 FR 42475, June 30, 2016).

(c) Applicability

This AD applies to General Electric Company (GE) GE90-76B, GE90-77B, GE90-85B, GE90-90B, and GE90-94B turbofan engines with a high-pressure compressor (HPC) stage 8-10 spool, part numbers (P/Ns) 1694M80G04, 1844M90G01, or 1844M90G02, installed.

(d) Subject

Air Transport Association (ATA) of America Code 72, Engine General.

(e) Unsafe Condition

This AD was prompted by an uncontained failure of the HPC stage 8-10 spool. We are issuing this AD to prevent failure of the HPC stage 8-10 spool, uncontained rotor release, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(1) For HPC stage 8-10 spool, P/N 1694M80G04, all serial numbers (S/Ns), or HPC stage 8-10 spool, P/N 1844M90G01 or 1844M90G02, with a S/N listed in Figure 1 to paragraph (f) of this AD; perform an on-wing ultrasonic inspection (USI) of the stage 8 aft web upper face as follows:

(i) Perform an initial USI after reaching 8,000 cycles since new (CSN), but, before exceeding 9,000 CSN, or within 500 cycles in service after July 29, 2016, whichever occurs later.

(ii) Thereafter, perform a USI of the stage 8 aft web upper face every 500 cycles since last inspection.

(iii) Compliance with paragraph (f)(2)(i) of this AD is terminating action for the initial and repetitive USIs specified by paragraphs (f)(1)(i) and (f)(1)(ii) of this AD.

Figure 1 to Paragraph (f) – HPC Stage 8-10 Spool S/Ns

Part Numbers	Serial Numbers				
1844M90G01	GWN005MF	GWNBK753	GWNBS077	GWNBS497	GWNBS724
	GWN005MG	GWNBK754	GWNBS078	GWNBS499	GWNBS794
	GWN0087M	GWNBK841	GWNBS079	GWNBS500	GWNBS810
	GWN0087N	GWNBK842	GWNBS080	GWNBS501	GWNBS811
	GWN00DGK	GWNBK843	GWNBS081	GWNBS502	GWNBS812
	GWN00DGL	GWNBK844	GWNBS157	GWNBS609	GWNBS813
	GWNBJ992	GWNBK952	GWNBS158	GWNBS610	GWNBS814
	GWNBK667	GWNBK953	GWNBS159	GWNBS611	GWNBS910
	GWNBK674	GWNBK954	GWNBS160	GWNBS612	GWNBS911
	GWNBK675	GWNBK955	GWNBS266	GWNBS613	GWNBS912
	GWNBK743	GWNBK956	GWNBS267	GWNBS614	GWNBS914
	GWNBK744	GWNBK957	GWNBS268	GWNBS721	GWNBS915
	GWNBK751	GWNBK958	GWNBS269	GWNBS722	GWNBS982
	GWNBK752	GWNBK959	GWNBS270	GWNBS723	GWNBS983
1844M90G02	GWN00C2T	GWN01C5N	GWN02N8D	GWN03RTM	GWN04E21
	GWN00C2V	GWN01GE2	GWN02T3R	GWN03RTP	GWN04GHT
	GWN00G2N	GWN01GE3	GWN02WGM	GWN040RL	GWN04GHW
	GWN00G2P	GWN01GE4	GWN0311K	GWN040RM	GWN04GJ0
	GWN00PFP	GWN01GE6	GWN035PP	GWN040RN	GWN04JW6
	GWN00PFR	GWN01WH1	GWN038TD	GWN040RP	GWN04JW7
	GWN00T2N	GWN02688	GWN039TG	GWN04202	GWN04JW8
	GWN00YHV	GWN02689	GWN03G2R	GWN0435W	GWN04L7K
	GWN0125G	GWN0268A	GWN03G2W	GWN04360	GWN04L7L
	GWN0125H	GWN02DP2	GWN03G30	GWN04361	GWN04MT7
	GWN0166K	GWN02DP3	GWN03JPC	GWN04362	GWN04MT8
	GWN01C5K	GWN02F9F	GWN03JPD	GWN04ATG	GWNBS984
	GWN01C5L	GWN02F9G	GWN03N8P	GWN04ATH	
	GWN01C5M	GWN02L9T	GWN03N8R	GWN04E20	

(2) For all HPC stage 8-10 spools, P/N 1694M80G04, 1844M90G01, or 1844M90G02, perform an eddy current inspection (ECI) of the stage 8 aft upper face as follows:

(i) Perform an initial ECI of the stage 8 aft web upper face at the next shop visit after the effective date of this AD.

(ii) Thereafter, perform an ECI of the stage 8 aft web upper face at each subsequent shop visit.

(3) Remove from service any HPC stage 8-10 spool that fails the inspection required by paragraphs (f)(1) or (f)(2) of this AD, and replace with a spool eligible for installation.

(g) Definition

For the purpose of this AD, an engine shop visit is the induction of an engine into the shop for maintenance during which the compressor discharge pressure seal face is exposed.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

(i) Related Information

(1) For more information about this AD, contact John Frost, Aerospace Engineer, Engine Certification Office, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7756; fax: 781-238-7199; email: john.frost@faa.gov.

(2) GE GE90 Service Bulletin (SB) SB 72-1151 R00, dated June 10, 2016, and Chapter 72-31-08, Special Procedures 003, and Chapter 72-00-31, Special Procedures 006, in GE GE90 Engine Manual, GEK100700, Revision 68, dated September 1, 2016, can be obtained from GE using the contact information in paragraph (i)(3) of this AD. This SB describes procedures for an on-wing USI of the stage 8 web of the stage 8-10 spool. These engine manual procedures describe how to perform ECI of the stage 8 aft web of the stage 8-10 spool.

(3) For service information identified in this proposed AD, contact General Electric Company, GE-Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215, phone: 513-552-3272; fax: 513-552-3329; email: geae.aoc@ge.com.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(j) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on November 29, 2016.

Colleen M. D'Alessandro,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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